



FAX : 2562822/2560955  
Tel : 2564033/2563924  
EPABX : 2561909/2562847  
E-mail: [paribesh1@ospcboard.org](mailto:paribesh1@ospcboard.org)  
Web site : [www.ospcboard.org](http://www.ospcboard.org)

**BY REGD POST**

## **STATE POLLUTION CONTROL BOARD, ODISHA**

(Department of Forest & Environment, Govt. of Odisha)  
Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII  
Bhubaneswar – 751012

No. 5689 /

IND-II-NOC- 6027

Date 21.04.17 /

### **OFFICE MEMORANDUM**

In consideration of the online application no. **788251** for obtaining consent to establish for **M/s NALCO Ltd. (Alumina Refinery Unit)**, the State Pollution Control Board has been pleased to convey its consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for **3<sup>rd</sup> phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA) by addition of 5<sup>th</sup> stream of 1.0 MTPA capacity and expansion of steam-cum-co-generation Power Plant (92.5 MW to 111 MW) by addition of 18.5 MW capacity co-generation Power Plant inside the existing premises of M/s. NALCO Ltd., At-Damanjodi, Village- Potangi (in Plot nos. and Khata nos. mentioned as per application form) in the district of Koraput** with the following conditions.

### **GENERAL CONDITIONS.**

1. This Consent to establish is valid for the raw materials, product, manufacturing process and capacity mentioned in the application form. This order is valid for five years, which means the proponent shall commence construction of the project within a period of five years from the date of issue of this order. If the proponent fails to do substantial physical progress of the project within five years then a renewal of this consent to establish shall be sought by the proponent.
2. The industry is to comply to the provisions of Environment Protection Act, 1986 and the Rules made thereunder with their amendments from time to time such as the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and amended thereafter, Hazardous Chemical Rules, /Manufacture, Storage and Import of Hazardous Rule, 1989 etc. and amendments thereunder. The industry is also to comply to the provisions of Public Liability Insurance Act, 1991, if applicable.
3. The industry shall apply for grant of Consent to operate under section 25/26 of Water(Prevention & Control of Pollution)Act, 1974 & Air (Prevention & Control of Pollution)Act, 1981 at least 3 (three) months before the commercial production and obtain Consent to Operate from this Board.
4. This consent to establish is subject to statutory and other clearances from Govt. of Odisha and / or Govt. of India as and when applicable.

## **SPECIAL CONDITIONS:**

### **GENERAL:**

1. The proponent shall seek environmental clearance as per EIA notification 2006 and amendment thereafter and construction activity for the proposal shall commence after obtaining environmental clearance.
2. This consent to establish is granted for the capacity as mentioned above and any expansion in the capacity change or modification in the process addition, alternation any nature has to be undertaken with prior approval of the Board. For any change in the site or area, fresh consent to establish has to be obtained from the Board. The proponent shall carry out construction activity as per approved lay out map (copy enclosed). If the proponent wants to change the approved plant layout map, they can submit a modified plant layout map with adequate justification for such modification.
3. Necessary preventive measures shall be taken during construction phase so that the ambient air quality including noise shall conform to National Ambient Air Quality standards and standards for noise in industrial area as per Annexure-I.
4. All Pollution control equipment may be provided with separate electricity meter and totalizer for continuous recording of power consumption. The amperage of the ID fan may also be recorded continuously. Non-functioning of Pollution control equipment should be recorded in the same logbook along with reasons for not running the Pollution Control Equipment.
5. The industry shall comply to all the conditions stipulated under Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines in a time bound manner as envisaged there in.
6. All the pollution control equipment shall be designed based on the recent norms of CPCB.
7. Standby pollution control equipment or alternate arrangements shall be kept ready so that no point of time even under worst condition any emission or effluent shall be discharged without meeting the prescribed norms.
8. The construction materials which has potential to be air borne, shall be transported in covered trucks.
9. The civil construction shall be carried out with the fly ash bricks. If the fly ash bricks are not available locally the civil construction may carried out with other bricks with prior intimation to the concerned Regional Office of SPC Board. A statement indicating use of fly ash bricks during construction period shall be submitted to the Board quarterly for record.
10. The proponent shall comply to the provisions of E-Waste (Management) Rules, 2016 and amendment thereafter and shall handover e-waste to authorized collection centers/ register dismantlers/ recyclers for proper disposal of e-waste.
11. The proponent shall comply the plastic waste generated from the premises as per the Plastic Waste Management Rules, 2016 and amendment thereafter.
12. A green belt of adequate width and density preferably with local species along the periphery of the power plant shall be raised so as to provide protection against particulates and noise. It must be ensured that at least 33% of the total land area



**shall be under permanent green cover, in such a manner that, plantation shall be taken up atleast in 20% of the total green belt area and progressively achieve 100% in a span of five years.**

13. All the plastic waste generated from industry during construction and commissioning shall be collected and sent for co-processing units.
14. The Board may impose further conditions or modify the conditions stipulated in this order during installation and /or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented and /or any information suppressed in the application form.
15. No production activity shall commence prior to installation of all pollution control measures. In case, it is found that the plant is operating without installation of appropriate pollution control equipment(s) and without permission for trial operation from the Board, a direction of closure shall be issued u/s 31-A of Air (PCP) Act, 1981 and / or u/s 33-A of Water (PCP) Act, 1974 without any further notice in this regard.
16. In case of any deviation or alteration in the project proposed from those submitted to this office for clearance, a fresh reference should be made to the Board to assess the adequacy of the conditions imposed and to add additional environmental protection measures required, if any.

#### **WATER POLLUTION:**

17. The wastewater generated from Blow down and DM plant shall be treated individually to meet the following prescribed standard of effluent discharge to inland surface water. The treated water shall be stored in a common basin for utilization for plantation and green belt purposes inside the factory premises.

Parameters	Boiler Blow down	Cooling Tower Blow down	DM plant
pH	----	----	6.5 to 8.5
Suspended solids	100	----	100
Oil and grease	20	----	10
Copper (Total)	1.0	----	----
Iron (Total)	1.0	----	----
Free available Chlorine	----	0.5	----
Zinc	----	1.0	----
Chromium (Total)	----	0.2	----
Phosphate	----	5.0	----

**N.B: Limiting concentration in mg/l except for pH.**

18. Sewage Treatment Plant of adequate capacity shall be installed for the treatment of domestic effluent generated from the colony and the plant and shall be reused for greenbelt development after meeting the following prescribed standards:

Sl. No.	Parameters	Standards
1.	pH	6.5-9.0
2.	BOD(mg/l)	Not more than 10
3.	COD(mg/l)	Not more than 50
4.	TSS(mg/l)	Not more than 20
5.	NH4-N(mg/l)	Not more than 05

Sl. No.	Parameters	Standards
6.	N-total(mg/l)	Not more than 10
7.	Fecal Coliform (MPN/100ml)	Less than 100

**Note: These standards will be applicable for discharge in water resources as well as for land disposal. The standards for Fecal Coliform may not be applied for use of treated sewage in industrial purposes**

19. **The storm water drains shall be maintained separately without being mixed up with the industrial effluent or sewage effluent.**
20. Regular monitoring of runoff water from the ash disposal area and excess ash water shall be carried out with respect to pH, SS, O&G and fluoride content and monitoring report shall be submitted to the Board every quarter.
21. Oil catch pits shall be provided in oil handling area of power plant for collection of spillage.
22. The seepage water of ash pond collected in the toe drain shall be monitored every month with respect to pH, SS, O&G and fluoride and shall meet the following standards:

Parameters	Limiting concentration in mg/l except for pH
pH	6.5 to 8.5
Suspended solids	100 mg/l
COD	250
Oil & Grease	20
Fluoride	2.0

and the monitoring report shall be submitted to the Board quarterly.

23. After treatment the treated waste water will be used inside the premises. The plant should be designed for zero discharge of effluent as proposed.
24. **The Red Mud shall be disposed of in HCSD system.** The minimum consistency of 55% shall be maintained while discharging red mud into the Red Mud Pond.
25. **Effluent generated from the dust suppression system in bauxite and coal handling system shall be diverted to effluent pond and reused after treatment.**
26. **Contamination of storm water in the process area cannot be ruled out. Hence, continuous online monitoring system both in the storm water drain and effluent drain at the appropriate place should be installed. Provision also be made to divert the storm water to treated waste water storage pond in case contamination is observed.**
27. Adequate treatment system for wastewater generated from the laboratory shall be provided and the treated water be diverted to guard pond.
28. **The waste water generated from dust suppression / DM plant water / oil unloading and other sources shall be treated to meet the following norms and shall be reused for ash handling.**

pH – 6.5-8.5  
TSS – 100 mg/l  
O&G – 10 mg/l



29. Adequate numbers of observation wells shall be made around ash pond, red mud pond and process water pond (alkaline reservoir) and ground water shall be monitored to check the contamination level of ground water. The location of these wells shall be finalized in consultation with the Board. Monitoring report of ground water quality shall be submitted to the State Pollution Control Board quarterly.
30. The proponent shall provide bunds of adequate height, garland drains around coal and bauxite storage area followed by series of settling tanks to retain the solids from the stock pile and runoff and prevent damage to the surrounding land and water bodies.
31. The runoff from ash pond area and red mud pond area shall be collected treated and reused in process replacing fresh water.
32. Acidic effluent from cleaning shall be neutralized and taken to effluent pond for reuse.
33. The unit shall provide oil and grease trap followed by settling tank for treatment of the effluent generated from mechanical workshop / vehicle workshop. After treatment the same will be taken to dirty water pond and reused.
34. The industry shall adopt High Concentration Slurry Disposal (HCSD) method for ash disposal.

#### **AIR POLLUTION:**

35. The water spraying facility shall be provided to keep the red mud and ash wet in the ponds to prevent it from being air borne.
36. Continuous monitoring of Ambient Air Quality and Stack data to be displayed in the main gate and will be easily accessible to internet as per CPCB guidelines.
37. ESP shall be designed to achieve emission standard of 50 mg/Nm<sup>3</sup>. The unit shall have provision of one spare field in the ESP and if more than one field of ESP fails the plant shall trip automatically through an interlocking system.
38. The unit shall install adequate dust extraction as well as dust suppression system at all potential dust generating points to control fugitive dust emission and the ambient air quality inside the factory premises shall conform to the standard with reference to National Ambient Air Quality Standard prescribed by MoEF&CC, Govt. of India dated 16.11.2009 enclosed as Annexure – II.
39. The unit shall provide Air Pollution Control devices and stack height as proposed in the environmental management plan of EIA report as follows:

Source	Stack Height	APC devices
Coal Fired Boiler	150 m	ESP
Calcination plant	85 m	ESP

40. The unit shall comply the following prescribed stack emission standards attached to the ESP as per the Gazette of MoEF&CC, Govt. of India vide S.O. 3305(E), dt. 07.12.2015.

Sl No.	Parameters	Prescribed standard (mg/Nm <sup>3</sup> )
1	Particulate Matter (PM)	30
2	Sulphur Dioxide (SO <sub>2</sub> )	100
3	Oxides of Nitrogen (NOx)	100
4	Mercury (Hg)	0.03

41. The unit shall take adequate measures for controlling of fugitive dust emission during transportation of fly ash for utilization. Good housekeeping practices shall be followed to improve the work environment. All roads and shop floors shall be cleaned regularly.
42. The proponent shall install 03 nos. of Ambient Air Quality continuous monitoring stations within the plant premises at an angle of  $120^{\circ}$  to each other at the periphery of the plant premises to monitor  $PM_{10}$ ,  $PM_{2.5}$ ,  $SO_2$ ,  $NO_x$ , CO and other important parameters as given in as per Annexure – I above within at least to the distance in down wind direction and where maximum ground level concentration is anticipated. The exact location of the monitoring stations shall be finalized in consultation with the State Pollution Control Board.
43. Pneumatic conveyor system shall be provided as dust collection system for ESP dust. Silos shall be provided for collection of bottom ash and fly ash. Conveyor belt shall be closed and bag filter shall be provided at transfer points of conveyor system to control fugitive emission.
44. Air pollution Control devices shall be maintained properly. Fabric bags and cages in bag house shall be checked regularly and replaced whenever required. Adequate availability of spares shall be ensured for immediate replacement.
45. If coal or bauxite will be transported through trucks, tippers etc. they shall be done so under covered conditions to be avoided any spillages etc. on the road.
46. Silencer in steam safety valve should be provided. Air compressor, DG set and turbine house should be acoustically designed and should be housed in appropriate acoustic enclosures so that the noise level outside it shall conform to the prescribed norms. The unit shall take adequate noise control measures. In case of steam venting by passing through adequate control system.
47. Industry shall provide necessary acoustic enclosures at appropriate places to control overall noise level. The overall noise levels shall be kept well within the standards as per Annexure-I.

#### **SOLID AND HAZARDOUS WASTE:**

48. Keeping in view the potential hazard relating to the risk of rupture and run-out of the red mud from the pond, dry stacking has been considered as an effective alternative, which shall be adopted in a small-scale to start with.
49. R & D activities towards the recovery of metal values or conversion to value-added products like Fe-C composites (Red mud plus methane) shall be used for the removal of arsenic and chromium from drinking water or sulphur-impregnated red mud for water treatment and environmental remediation application shall be undertaken in-house (preferably) or as sponsored projects in Institutes or Laboratories of national repute.
50. The industry shall ensure ash utilization in cement industry, brick making and in raising as dyke etc. Efforts shall be made to ensure 100 % utilization of fly ash as per provisions of the notification on fly ash utilization issued by the Ministry of Environment and Forest, Govt. of India dated 3<sup>rd</sup> November, 2009 and amendment thereafter.



51. The unit shall obtain authorization from the Board under Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and amended thereafter.
52. The Gypsum generated from the Flue Gas De-sulphurisation (FGD) shall be disposed off through cement manufacturer and brick manufacturers as proposed.
53. An integrated solid waste management site for colony, power plant, refinery to be developed to treat all municipal solid waste and Hazardous Waste and its reuse.
54. The portion of fly ash shall be collected as dry ash and stored in a silo. The dry ash shall be given to local fly ash brick makers or cement making.
55. During transportation of fly ash through trucks, they shall be done so under covered condition to avoid any spillage and dust emission. Dry fly ash shall be unloaded to specially made fly ash tankers with the help of telescopic chutes to avoid dust emission from the unloading and transportation operations.
56. The industry may increase the capacity of pond by raising dyke or otherwise out evacuate maximum quantity of water to prevent over flow under any circumstances even during rainy season.
57. All the earthen dams / embankments shall be guarded for safety and all the ponds such as ash pond. Red mud pond must be surrounded with a Green Belt of at least two rows.
58. All the used oil and batteries shall be sold to authorized re-processors.
59. Provision of hazardous waste management should be in place. Spent acid from descaling of tanks and pipes salt cake from the liquor purification, waste oil from workshop, oily sludge be properly disposed of in a secured land fill.
60. All the scrap generated due to project and operation must be cleaned, reused or recycled or sold regularly to create a best housekeeping.

**Encl: Approved layout map and Annexures.**

**To**

**The General Manager,  
M/s. NALCO Ltd.,  
Project and Technical Department,  
Corporate Office, NALCO Bhawan,  
P-1, Nayapalli, Bhubaneswar, Odisha-751061**

*29/4/17*  
**MEMBER SECRETARY**



Memo No. 5690 /Dated 21.04.17 /

Copy forwarded to:

1. The District Magistrate & Collector, Koraput.
2. The District Industries Centre, Koraput.
3. The Director, Factories & Boiler, Bhubaneswar
4. The Regional Officer, SPC Board, Rayagada.
5. Consent to Operate Cell, SPC Board, Odisha
6. The DFO, Koraput.
7. Hazardous Waste Management Cell, SPC Board, Odisha, Bhubaneswar
8. Copy to Guard file/consent to establish section.

*21/4/17*  
**SR. ENV. ENGINEER (N)**

*Received original CTE  
21/4/17  
J. Ban Mahapatra  
SPM, SHEWAN  
CO. 15/3/17*